

WHAT IS CLAIMED IS:

1. A high availability planning and scheduling system, comprising:  
a plurality of high availability (HA) systems coupled to one or more external  
systems using a message bus, each HA system including:

5 an HA server operable to receive and queue requests received from the  
external systems; and

an advanced planning and scheduling (APS) engine operable to:

receive a request from the HA server;

10 process the request using planning information stored in  
memory of the HA system;

modify the planning information according to the processing of  
the request; and

generate a response to the external system from which the  
request originated; and

15 a message manager operable to direct each request received from an external  
system to an appropriate HA system using the message bus.

2. The system of Claim 1, wherein:

the HA systems are associated with a supplier of products;

20 the external systems comprise external ordering systems associated with  
customers;

the message bus comprises the Internet;

the requests comprise product orders from customers;

25 the planning information comprises available-to-promise (ATP) supply  
information associated with one or more products; and

the APS engine comprises a demand fulfillment engine operable to promise  
ATP supply to a customer in response to the product orders.

3. The system of Claim 1, wherein the HA server in each HA system is  
30 further operable to communicate modifications to the planning information made by  
the associated APS engine to the other HA systems.

4. The system of Claim 1, wherein:

the plurality of HA systems comprise:

a primary HA system operable to process requests requiring modification of the planning information; and

5 one or more secondary HA systems operable to process requests not requiring modification of the planning information; and

the message manager is operable to:

direct requests received from external systems and requiring modification of the planning information to the primary HA system; and

10 direct requests received from external systems and not requiring modification of the planning information to one of the secondary HA systems.

5. The system of Claim 4, wherein:

15 the primary HA system is further operable to communicate information to the secondary HA systems relating to modifications made to the planning information by the APS engine of the primary HA system; and

each secondary HA system is operable to modify the planning information stored in memory associated with the secondary HA system according to the information received from the primary HA system.

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6. The system of Claim 4, wherein at least one of the secondary HA systems is operable to become the primary HA system in the event the primary HA system becomes unavailable.

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7. The system of Claim 4, wherein the message manager is further operable to direct each request not requiring modification of the planning information to a particular one of a plurality of secondary HA systems based at least on the number of requests that are queued in the particular secondary HA system.

8. The system of Claim 4, wherein:

the requests requiring modification of the planning information comprise product orders; and

the requests not requiring modification of the planning information comprise product inquiries.

9. The system of Claim 1, wherein each HA system further comprises a transform library operable to:

receive the response from the APS engine and modify the response to a format appropriate for the external system for which the response was generated; and

receive a request from an external system and modify the request to a format appropriate for the APS engine included in the HA system.

10. The system of Claim 1, wherein:

a first HA system includes a first version of the APS engine;

a second HA system includes a second version of the APS engine;

each request received from the external systems indicates the version of the APS engine with which the request is associated; and

the message manager is further operable to communicate each request to either the first HA system or the second HA system based on the version indicated in the request.

11. A primary high availability (HA) system, comprising:

an HA server operable to receive and queue requests received from one or more external systems that are coupled to the primary HA system using a message bus; and

5 an advanced planning and scheduling (APS) engine operable to:

receive a request from the HA server;

process the request using planning information stored in memory of the HA system;

10 modify the planning information according to the processing of the request; and

generate a response to the external system from which the request originated; and

generate a replication message including information reflecting the modifications made to the planning information by the primary HA system;

15 the HA server further operable to communicate the replication message to one or more secondary HA systems that are coupled to the primary HA system and to the external systems, each secondary HA system operable to modify a local copy of the planning information stored in memory of the secondary HA system according to the replication message.

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12. The system of Claim 11, further comprising a transform library operable to:

receive the response from the APS engine and modify the response to a format appropriate for the external system for which the response was generated; and

25 receive a request from the external system and modify the request to a format appropriate for the APS engine.

13. The system of Claim 11, wherein:

the external system comprises an external ordering system associated with customers;

the requests comprise product orders from customers;

5 the planning information comprises available-to-promise (ATP) supply information associated with one or more products; and

the APS engine comprises a demand fulfillment engine operable to promise ATP supply to a customer in response to the product orders.

14. A method for high availability planning and scheduling, comprising:  
receiving a request received from one or more external systems at a primary  
high availability (HA) system using a message bus;  
processing the request using an advanced planning and scheduling (APS)  
5 engine and planning information stored in memory of the primary HA system;  
modifying the planning information according to the processing of the request;  
and  
generating a response to the external system;  
communicating the response to the external system;  
10 generating a replication message including information reflecting the  
modifications made to the planning information by the primary HA system; and  
communicating the replication message to each secondary HA system coupled  
to the external system using the message bus and operable to process requests from  
the external system, the secondary HA system further operable to modify a local copy  
15 of the planning information stored in memory of the secondary HA system according  
to the replication message.

15. The method of Claim 14, wherein:  
the primary HA system processes requests requiring modification of the  
20 planning information;  
the secondary HA system processes requests not requiring modification of the  
planning information; and  
the method further comprises:  
directing requests received from external systems and requiring  
25 modification of the planning information to the primary HA system; and  
directing requests received from external systems and not requiring  
modification of the planning information to the secondary HA system.

16. The method of Claim 15, further comprising directing requests not  
30 requiring modification of the planning information to a particular one of a plurality of  
secondary HA systems based at least on the number of requests that are queued in the  
particular secondary HA system.

17. The method of Claim 15, wherein:

the requests requiring modification of the planning information comprise product orders; and

5 the requests not requiring modification of the planning information comprise product inquiries.

18. The method of Claim 14, further comprising replacing the primary HA system with the secondary HA system in the event primary HA system becomes  
10 unavailable.

19. The method of Claim 14, further comprising:

receiving the request and modifying the request to a format appropriate for the APS engine; and

15 receiving the response and modifying the response to a format appropriate for the external system.

20. The method of Claim 14, wherein:

20 the external system comprises an external ordering system associated with customers;

the request comprises product orders from customers;

the planning information comprises available-to-promise (ATP) supply information associated with one or more products; and

25 the APS engine comprises a demand fulfillment engine operable to promise ATP supply to a customer in response to the product orders.

21. High availability planning and scheduling software embodied in a computer-readable medium and operable to:

receive a request received from one or more external systems at a primary high availability (HA) system using a message bus;

5 process the request using an advanced planning and scheduling (APS) engine and planning information stored in memory of the primary HA system;

modify the planning information according to the processing of the request; and

generate a response to the external system;

10 communicate the response to the external system;

generate a replication message including information reflecting the modifications made to the planning information by the primary HA system; and

15 communicate the replication message to each secondary HA system coupled to the external system using the message bus and operable to process requests from the external system, the secondary HA system further operable to modify a local copy of the planning information stored in memory of the secondary HA system according to the replication message.

22. The software of Claim 21, further operable to:

20 directing requests received from external systems and requiring modification of the planning information to the primary HA system; and

directing requests received from external systems and not requiring modification of the planning information to the secondary HA system.

25 23. The software of Claim 22, further operable to direct requests not requiring modification of the planning information to a particular one of a plurality of secondary HA systems based at least on the number of requests that are queued in the particular secondary HA system.



24. The software of Claim 22, wherein:  
the requests requiring modification of the planning information comprise  
product orders; and  
the requests not requiring modification of the planning information comprise  
product inquiries.

25. The software of Claim 21, further operable to replace the primary HA  
system with the secondary HA system in the event primary HA system becomes  
unavailable.

26. The software of Claim 21, further operable to:  
receive the request and modify the request to a format appropriate for the APS  
engine; and  
receive the response and modify the response to a format appropriate for the  
external system.

27. The software of Claim 21, wherein:  
the external system comprises an external ordering system associated with  
customers;  
the request comprises product orders from customers;  
the planning information comprises available-to-promise (ATP) supply  
information associated with one or more products; and  
the APS engine comprises a demand fulfillment engine operable to promise  
ATP supply to a customer in response to the product orders.

28. A system for high availability planning and scheduling, comprising:  
means for receiving a request received from one or more external systems at a  
primary high availability (HA) system using a message bus;  
means for processing the request using an advanced planning and scheduling  
5 (APS) engine and planning information stored in memory of the primary HA system;  
means for modifying the planning information according to the processing of  
the request; and  
means for generating a response to the external system;  
means for communicating the response to the external system;  
10 means for generating a replication message including information reflecting  
the modifications made to the planning information by the primary HA system; and  
means for communicating the replication message to each secondary HA  
system coupled to the external system using the message bus and operable to process  
requests from the external system, the secondary HA system further operable to  
15 modify a local copy of the planning information stored in memory of the secondary  
HA system according to the replication message.

29. A high availability planning and scheduling system, comprising:

a plurality of high availability (HA) systems associated with a supplier of products and coupled to one or more external ordering systems using a message bus, each HA system including:

5 an HA server operable to receive and queue requests received from the external systems; and

an demand fulfillment engine operable to:

receive a request from the HA server;

10 process the request using available-to-promise (ATP) supply information associated with one or more products and stored in memory of the HA system;

modify the ATP supply information according to the processing of the request; and

15 generate a response to the external system from which the request originated;

the plurality of HA systems including a primary HA system operable to process product orders and one or more secondary HA systems operable to process product inquiries;

20 the primary HA system further operable to communicate information to the secondary HA systems relating to modifications made to the ATP supply information by the APS engine of the primary HA system resulting from processing of product orders;

25 each secondary HA system operable to modify the ATP supply information stored in memory associated with the secondary HA system according to the information received from the primary HA system and further operable to become the primary HA system in the event the primary HA system becomes unavailable; and

a message manager operable to:

direct product orders to the primary HA system; and

direct product inquiries to one of the secondary HA systems.